

<div><p>www.apc.com</p><h1>SurgeArrest® Panel Mounted Surge Protection Device</h1><p>User's Manual</p><p>990-0522 10/00</p></div>	Introduction / Parts List and Inspection	
	<div><h2>1 Introduction</h2><p><i>Thank you for choosing APC's SurgeArrest Panel Mount (PM series) Surge Protector!</i></p><p>This manual provides instructions for installing the SurgeArrest Panel Mounted Surge Protection Device (SPD). Save this manual! It includes instructions for obtaining warranty service, returning a defective device, and ordering of replacement parts.</p><p>Please read and understand all information in this manual prior to installation. This manual is to be used as a guide for installing the device. The procedures contained herein are not intended to supercede local or national electrical codes. Check all applicable electrical codes to ensure compliance. In all instances, local and national electrical code requirements are to be followed.</p><p>APC's Panel Mounted SPD is a high-quality, high-energy surge attenuation system that has been designed for use in residential and small business applications and provides a 40kA per phase rating. The SPD is intended for mounting within the breaker panel enclosure (service entrance), or external to the breaker panel using an optional External Mount Suppressor Kit.</p><p>The SPD is a parallel transient voltage surge suppressor employing thermally protected MOVs as the suppression elements. Suppression elements are connected L-G (line to ground) and L-L (line to line).</p><p>The SPD is used to protect the residential or small business breaker panel from damaging transient voltage surges. Proper installation is imperative to maximize the effectiveness and overall performance of the device.</p><p>This device must be installed by a licensed electrician. The electrician should follow the steps outlined in this manual to insure proper installation. A copy of the electrician's invoice detailing the installation of this device is required in order to obtain warranty service for the device.</p><p><i>Note:</i> APC products are extensively tested to industry standards as set by IEEE C62.41, and C62.45, for Categories A, B, and C. The connection method of this Surge Protection Device may require several feet of wire. Increased lead length adversely affects clamping voltages. Mount the SPD as close to the service entrance as possible.</p></div>	<div><h2>2 Parts List and Inspection</h2><p>Items included in the package consist of the following:</p><ul style="list-style-type: none">• 1 Hardwired Panel Mount SPD.• 1 Green Light Emitting Diode (LED) Wiring Assembly with Hex Nut.• 1 DC Wiring Assembly (to be spliced to the LED Wiring Assembly).• 2 Butt-Splice Connectors.• 4 Self-Tapping Sheet-Metal Screws.• Double-Sided Foam Tape (qty. 2).• 1 User's Manual (this document).• Label (to be placed around the LED indicator once it is installed)<p>If the External Mount Suppressor Kit was ordered, additional parts are supplied as follows:</p><ul style="list-style-type: none">• External Mount Enclosure• Nipple Kit• Mounting Screws (4)<p>Carefully inspect each item in the package for signs of damage.</p><p>If damage is found, please contact APC Customer Service (1-800-800-4APC).</p><p>For additional information about this product, or other APC products, go to www.apc.com on the internet.</p></div>
Installation		
<div><h2>3 Safety Information</h2><p>This section provides pertinent safety information that must be considered before installing the Panel Mount SPD.</p><ul style="list-style-type: none">• Do not install this device during a lightning storm.• For indoor use only.• Do not install the surge protector in a hot or excessively moist location.• Other safety considerations are as follows:</div> <div><div><h3>WARNING</h3></div><div>VERIFY THAT ALL POWER CIRCUITS ARE DE-ENERGIZED BEFORE MAKING CONNECTIONS</div><div>All electrical connections should be performed by a qualified (licensed) electrician. All wiring must comply with the National Electric Code (NEC) and applicable local codes.</div></div>	<div><h2>4 How to Install the Internally Mounted SPD</h2><p>The Panel Mount SPD (Figure 1) is designed to be installed internally behind the breaker panel. The unit can be installed using the included self-tapping sheet metal screws or double-sided foam tape. To install the SPD,. proceed as follows:</p></div> <div></div> <div><ol style="list-style-type: none">1. Ensure that power to the breaker panel has been removed or is not yet connected.2. Remove the screws that secure the outer breaker panel cover to the breaker box (see Figure 2).3. Locate where in the cavity of the breaker box the SPD will be installed. It is recommended that the SPD be located in the side of the breaker box cavity as close to the first 30 amp circuit breaker as possible (see Figure 2.)4. If using self-tapping sheet metal screws, place the SPD where it will be installed and mark the location of the mounting holes using the holes in the top and bottom flanges of the SPD as a guide.5. Drill four pilot holes using a 1/8" diameter drill bit. Align the holes in the flanges with the holes in the breaker box. Install the SPD using the four self-tapping sheet metal screws provided. See the Note in Figure 2.6. If using double-sided foam tape, remove each piece of tape from the paper backing and apply the tape to the back side of the SPD. Ensure that the mounting surface of the breaker box is free of dirt, rust and grease. Remove the top piece of paper from each piece of foam tape and secure the SPD to the breaker box.7. Locate where the LED indicator will be installed in the breaker box cover and mark the location.8. Drill a 1/4" diameter hole at the mounting location. See the Note in Figure 2.9. Remove the pre-cut material at the center of the Warning label (provided), remove the paper backing from the Warning label and place the hole in the label around the hole drilled in the enclosure cover (step 8).10. Remove the hex nut from the back side of the LED wiring assembly.11. Feed the LED indicator wires through the hole drilled in step 8 and install the hex nut removed in step 10. Ensure that the LED indicator is facing outward.12. Butt-splice the wires (polarity does not matter) from the LED wiring assembly to the DC wiring assembly by inserting one end of each wire into the butt-splice (supplied). Squeeze the metal contact of the butt-splice downward. Ensure the wires cannot be pulled out of the butt splice. Repeat for the other two wires. Plug the other end of the DC wiring assembly into the SPD.13. Connect the wiring from the SPD (shown in Figure 2), as follows:<ol style="list-style-type: none">a. Connect one black wire from the SPD to the appropriate circuit breaker, ensuring the the line length is as short as possible.b. Connect the other black wire from the SPD to the same circuit breaker used in Step 12a.c. Connect the green wire from the SPD to a neutral or ground bus of the circuit breaker panel.14. Install the circuit breaker panel cover; turn power to the circuit breaker panel ON.16. Ensure that the green LED indicator is lit.<p>If the green LED indicator is not lit, remove power from the circuit breaker panel, remove the cover and check all connections.</p><p>If the green LED indicator still will not light, contact APC Technical Support at (800) 800-4APC, or at www.apc.com.</p>17. Install all other labels (provided) where they will be visible.</div>	
<div><div><h3>WARNING</h3></div><div><ul style="list-style-type: none">• MAINTENANCE OF THIS SURGE PROTECTION DEVICE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY.• DURING NORMAL OPERATION, HAZARDOUS VOLTAGES ARE PRESENT INSIDE THE UNIT.• WHEN SERVICING THIS UNIT, BE SURE TO FOLLOW ALL ELECTRICAL SAFETY PRECAUTIONS.• ALL POWER SOURCES TO THIS UNIT SHOULD BE LOCKED OFF BEFORE SERVICING. THIS WILL PREVENT THE RISK OF RECEIVING AN ELECTRICAL SHOCK.</div></div> <div><div><h3>CAUTION</h3></div><div>BONDING BETWEEN CONDUIT CONNECTIONS NOT AUTOMATIC AND MUST BE PROVIDED AS PART OF THE INSTALLATION</div></div> <div><div><h3>CAUTION</h3></div><div>CONDUCTING DIELECTRIC AND/OR HIGH POTENTIAL TESTING WILL CAUSE INTERNAL DAMAGE TO THE TVSS UNIT. DO NOT PERFORM DIELECTRIC OR HIGH POTENTIAL TESTS WITH THE PHASE OR NEUTRAL TVSS WIRES CONNECTED.</div></div>		

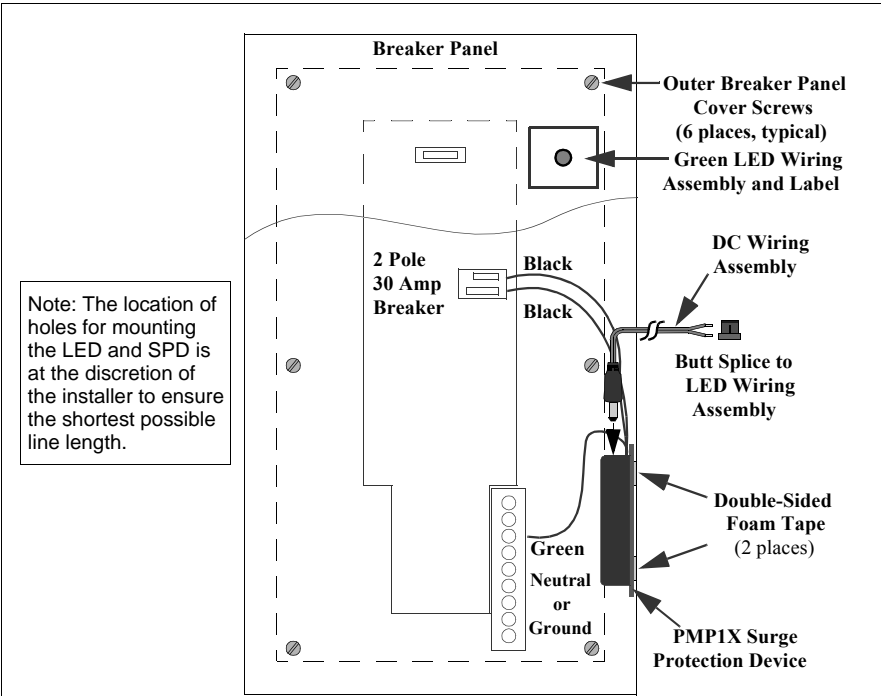
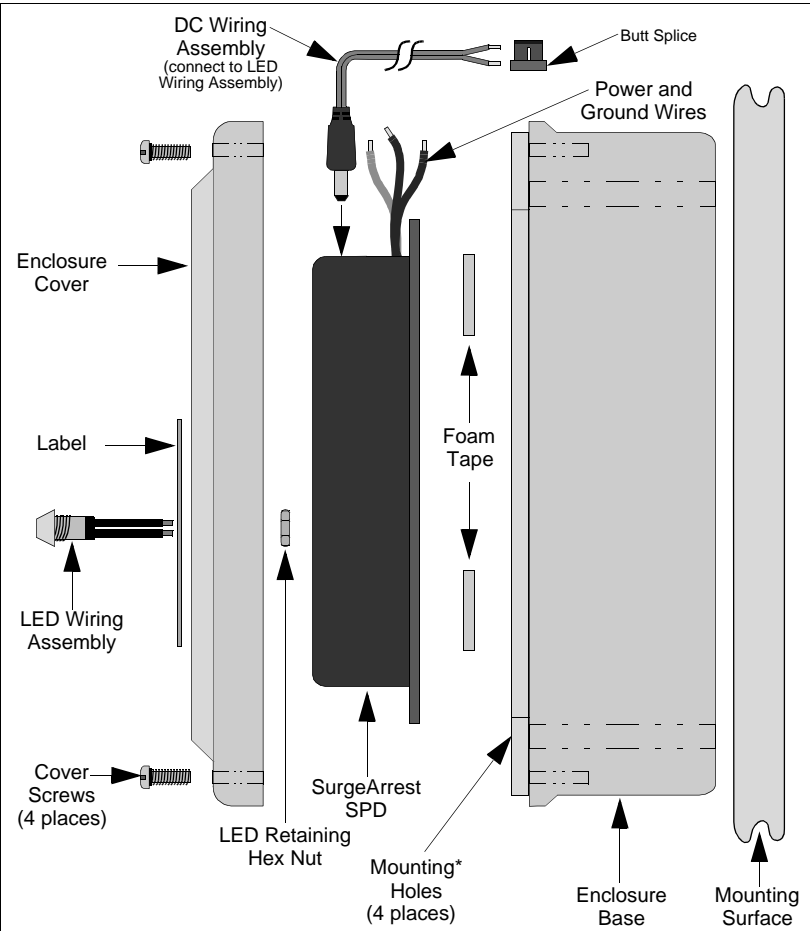


Figure 2. Panel Mount Surge Protection Device Installation

5 How to Install an Externally Mounted SPD

The Panel Mount SPD can be installed externally near the breaker panel. This can be accomplished by installing the SPD into the optional external mount kit. To install the SPD and external mount kit, proceed as follows:

1. Ensure that power to the breaker panel has been removed or is not yet connected (new construction). Remove the screws that secure the cover to the circuit breaker assembly.
2. Remove the four screws that secure the cover to the external mount kit (refer to Figure 3).
3. Locate where outside the cavity of the breaker box the SPD and external mount kit will be installed. It is recommended that the final assembly be located as close to the breaker box and as close to the first 30 amp circuit breaker as possible.
4. Place the external mount kit enclosure where it will be installed and mark the location of the mounting holes using the holes in the top and bottom of the enclosure as a guide.
5. Determine the orientation of the SPD within the enclosure.
Note: The location of holes to be drilled for the LED indicator and offset nipple are at the discretion of the installer to ensure the shortest possible line length.
6. Locate and mark the location for the LED indicator on the enclosure cover. Drill a 1/4" hole in the cover. Remove the pre-cut material at the center of the Warning label (provided), remove the paper backing from the Warning label and place the hole in the label around the hole in the enclosure cover.
7. Remove the retaining hex nut from the LED wiring assembly. Feed the wires of the LED wiring assembly through the hole in the enclosure cover (ensure the LED is facing outward).
8. Drill a 3/4" hole at the location for the offset nipple.
9. Install one end of the offset nipple through the hole drilled in Step 8. Install a sealing washer and hex nut onto the offset nipple (Figure 3).
10. Butt-splice the wires from the LED wiring assembly to the DC wiring assembly by inserting one end of each wire into the butt-splice (supplied). Squeeze the metal contact of the butt-splice downward. Ensure the wires cannot be pulled out of the butt splice. Fold the cover of the butt-splice over the metal contact until the cover of the butt-splice latches to the bottom portion of the butt-splice. Repeat this step for the other two wires.
11. Plug the DC wiring assembly into the SPD.
12. Ensure that the mounting surface of the enclosure is free of dirt, rust and grease. Remove each piece of foam tape (provided) from the paper backing and apply the tape to the back side of the SDP. Remove the top piece of paper from each piece of foam tape and secure the SPD in the enclosure ensuring that the wires from the SPD are fed through the offset nipple.
13. Install the enclosure to the mounting surface using four 1.25", 18-8 pan-head sheet metal phillips-head screws (provided).
14. Install the cover to the enclosure. Ensure that the screws are tight.
15. Connect the wiring from the SPD (shown in Figure 2), as follows:
 - a. Connect one black wire from the SPD to the appropriate circuit breaker, ensuring the the line length is as short as possible.
 - b. Connect the other black wire from the SPD to the same circuit breaker used in Step 15a.
 - c. Connect the green wire from the SPD to a neutral or ground bus of the circuit breaker panel.
16. Install the cover to the circuit breaker panel.
17. Turn the power to the circuit breaker panel ON.
18. Ensure that the green LED indicator on the enclosure is lit.
If the green LED indicator is not lit, remove power from the circuit breaker panel, remove the cover and check all connections.
If the green LED indicator is still not lit, remove the cover from the enclosure and check the butt-spliced connections.
If the green LED indicator still will not light, contact APC Technical Support at (800) 800-4APC, or at www.apc.com
19. Install all other labels (provided) where they will be visible.



*Use No.8, 1.25", 18-8 pan-head sheet metal phillips-head screws (4 supplied)

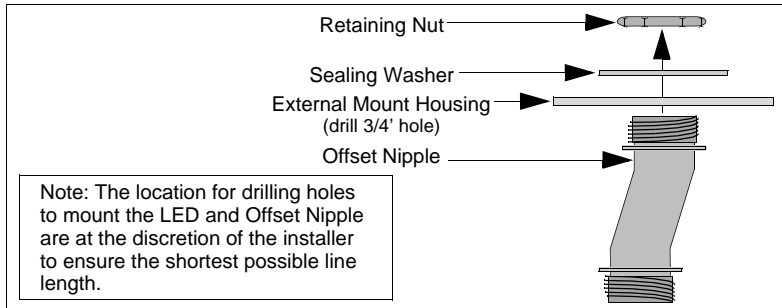


Figure 3. External Mount Kit Installation

Warranty and Service

APC warrants its AC panel protection products against defects in workmanship and materials for 5 years from the date of original purchase. The panel protection device must be installed by a qualified and licensed electrician in order to qualify for warranty protection.

Liability is limited to the replacement of the defective product. A Return Material Authorization (RMA) must be given by APC prior to the return of any product (see Technical Support and Customer Service). A copy of the invoice from the installer (electrician or electrical service company) must accompany the defective device being returned. If the return of a device is authorized by APC, APC will immediately ship a replacement unit to the customer. Along with the replacement unit, APC will include a pre-paid shipping tag for the return of the originally defective unit. The replacement unit will not be warranted unless the defective unit is received by APC.

Under no circumstance is APC responsible for the cost of removal or installation of any panel protection device.

The company specifically disclaims all other warranties, expressed or implied. Additionally, the company will not be responsible for incidental or consequential damages resulting from any defect in any product or component thereof.

Technical Support and Customer Service

United States and Canada: 1-800-800-4APC

This manual, as well as information about the entire APC product line is available on the internet at: www.apc.com. Prior to calling APC for technical assistance or ordering parts, please have the following information available:

Model Number of unit: _____
Serial Number of unit: _____
Manufacture Date: _____
Purchase Date: _____
Your Order Number: _____

Return Shipment Address

American Power Conversion Corporation
132 Fairgrounds Road
P.O. Box 278
West Kingston, Rhode Island 02892
USA